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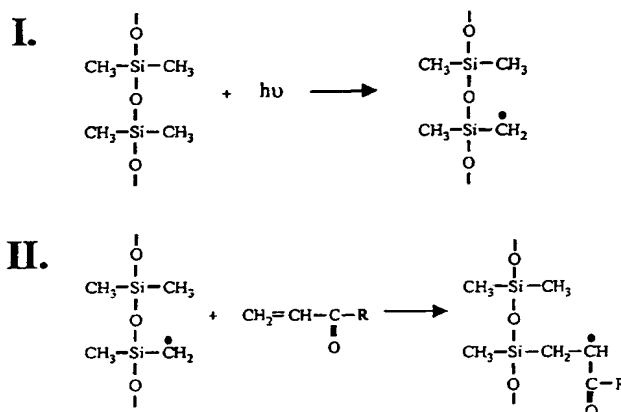
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(54) Title: CHEMICAL MODIFICATIONS TO POLYMER SURFACES AND THE APPLICATION OF POLYMER GRAFTING TO BIOMATERIALS



R: —OH  
—NH<sub>2</sub>  
—N(CH<sub>3</sub>)<sub>2</sub>  
—OCH<sub>2</sub>CH<sub>2</sub>OH  
—O(CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub>CH<sub>3</sub>

Acrylic Acid (AA)  
Acrylamide (AM)  
Dimethylacrylamide (DMA)  
2-Hydroxyethylacrylate (HEA)  
PEG monomethoxylacrylate (PEG)

(57) Abstract: Polymer-based biomaterials are popular due to ease of fabrication and low costs. However, many polymer substrates have undesirable surface properties. The invention provides a procedure to covalently apply a graft polymer to the surface of a polymer substrate by ultraviolet graft polymerization. The graft polymer is formed from monomers such as PEG, AA, monomethoxy acrylate PEG, HEMA, or DMA. Also, mixed monomers may be used to create the graft and the surface properties of the graft may be tailored for different properties, including hydrophobicity, friction coefficient, electroosmotic mobilities and electrophoretic separations. The invention has particular utility in tailoring surface chemistries in ocular lenses and polymer microdevices.